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RECONSIDERING SO-CALLED TEMPORAL BARE-NP ADVERBIALS IN ENGLISH: A CONSTRUCTION GRAMMAR ACCOUNT*

1 INTRODUCTION

In this paper, we shall present an analysis of so-called Bare-NP Adverbials (hereafter, BNAs), which traditionally refer to a class of nominals that do not involve prepositions but function adverbially.[1] In particular, we will focus on temporal BNAs in English within the framework of Construction Grammar. The goal of this paper is to analyze them in detail and propose that they are seen as 'constructions' in the sense of Construction Grammar (Kay and Fillmore 1999, Zwicky 1994, and Goldberg 1995, among many others).

The data that will be discussed in this paper are the following:

(1) John arrived that {moment/minute/hour/day/week/month/year}.
(2) John arrived {the previous April/March 12th/Sunday/the Tuesday that I saw Max}.
(3) a. John will arrive sometime next week.
    b. John has been here few times that I can recall.
(4) a. John arrived yesterday.
    b. John will arrive tomorrow.
    c. John is arriving now.
(5) a. John arrived *(on) that occasion.
    b. John arrived *(during) this vacation.
(Larson 1985: 596)
(6) a. We usually go for a walk every Sunday.
    b. Mary will see John some day. (Stroik 1992: 269)
    c. Come any day you like. (Swan 1995: 451)

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* I would like to express my gratitude to Yukio Oba for valuable suggestions. Thanks also go to Paul A. S. Harvey for stylistic improvement. The responsibility for any remaining errors and inadequacies is, of course, my own.

[1] Adopted for expository convenience, we employ the terminology 'bare-NP adverbs' from Larson (1985), rather than 'adverbial NPs' (McCawley 1988, Whitman 2002).

d. Mary will see John one day.
e. We stayed all day.

According to Larson's observation, first, NPs headed by common nouns which show calendar units such as days, months, and years can be bare. In (1), *that moment* or *that day* is acceptable without a preposition. Second, NPs which single out particular intervals of the calendar year, for example, *March 12th*, and NPs which function as proper names for periods, *Sunday*, as in (2) can stand without a preposition. Third, NPs headed by the common noun time, for example, *sometime* or *few times*, stand without a preposition as in (3). Fourth, the temporal proform *then* and the deictics *now*, *yesterday*, *today*, and *tomorrow* do not take a preposition as in (4). Finally, we observe the example which is unacceptable if they do not have a preposition as in (5). *Every Sunday*, *some day*, *any day*, *one day*, and *all day* in (6a-e), respectively, do not take prepositions and function as adverbials.

Within the generative grammar tradition, BNAs have been discussed by several researchers, for example, Bresnan and Grimshaw (1978), Larson (1985), Emonds (1987), and McCawley (1988). The Government and Binding (GB) Theory has difficulty accounting for licensing them because under the GB theory NPs have to receive a Case in accordance with the following Case Filter:

(7) Case Filter: *NP if NP has phonetic content and has no Case
(Chomsky 1981: 49)

In other words, although BNAs are modifiers, they are still noun phrases, hence they have to be assigned Case. The question is how bare-NP adverbs are assigned Case. For the GB theory, Case-assignment of bare-NP adverbs is apparently problematic.

Our argument will take the following form. Section 2 offers an overview of previous analyses on bare-NP adverbs and point out some problems thereof. In section 3, we will introduce our theoretical assumptions. In section 4, we provide a Construction Grammar approach to temporal bare-NP adverbs. The final section, section 5, presents concluding remarks.

2 PREVIOUS ANALYSES

2.1 Bresnan and Grimshaw (1978)

Bresnan and Grimshaw (1978) argue that bare NPs are PPs having no overt preposition and they posit phonologically zero deep structure prepositions. In other words, they assume Preposition Deletion, as follows:

(8) P Deletion

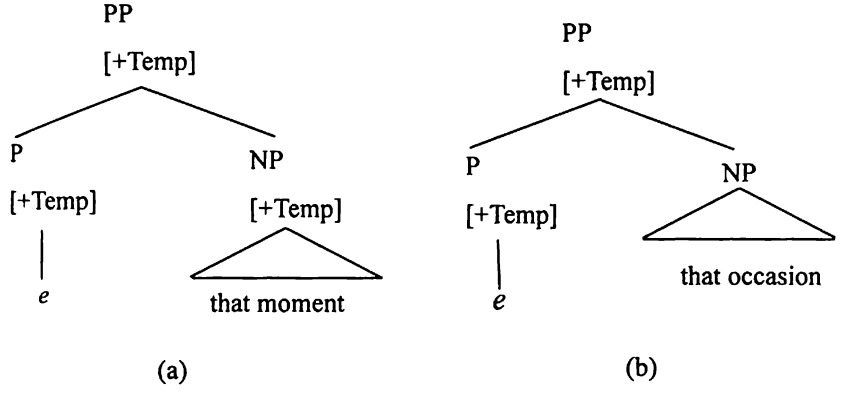
P --> Ø / __ NP

[+F] [+F]

where F is [Loc] or [Temp]

(Bresnan and Grimshaw 1978: 347)

This shows that the preposition with the feature F is deleted before the NP with the feature F, where F is [Loc] or [Temp]. According to B & G's analysis, for example, in Figure 1(a) P, PP, NP, and *that moment*, have the feature [+Temp], hence P is deleted. On the other hand, in Figure 1(b) P cannot be deleted because the NP *that occasion* does not have the feature [+Temp].



<Figure 1>

As seen in Figure 1, B & G assume that BNAs are PPs without a preposition. Larson (1985), however, points out that there are examples in which BNAs share the distribution of other adverbial categories, as seen in the following example:

(9) They will be arriving [Thursday] and or [subsequently].

(Larson 1985: 599)

Because of the observation that BNAs conjoin readily with adverbial categories, Larson (1985) argues that BNAs are adverbs, not PPs.

Furthermore, B & G's analysis is problematic in determining how the head noun of BNAs has the feature [+Temp] or not. Its determination appears to be ad hoc.

2.2 Larson (1985)

Contrary to Bresnan and Grimshaw (1978), Larson (1985) argues that BNAs are adverbs, not PPs.

To explain the status and distribution of BNAs, Larson makes two proposals; one is Adverbial θ-Role Assignment (AA), which is defined as follows:

(10) Adverbial θ-Role Assignment
Assign an adverbial θ-role to α, where α is any phrase.

(Larson 1985: 606)

(10) applies optionally, and like the assignment of other θ-roles, θ_{Temp} is assigned only to temporal phrases.

The other proposal is that nouns bear [+F] feature and they are inherently Case-marked (Oblique Case). As a consequence, since BNAs have received an adverbial θ-role and [+F] NPs behave like other adverbials, they can conjunct with other adverbials and co-occur with the intensifier *right*.

As Larson himself points out, however, two problems occur in his analysis; one is Case clash. Let us look at the following example:

(11) We spent that day in Tokyo.

Since an NP *that day* is in the object position in (11), it receives an Obj Case. Hence a [+F] NP receives Oblique Case inherently and Obj Case is assigned to the object position. This shows that an NP could receive two Cases. This violates the Case filter. To solve this problem, he assumes that Case-assignment by a [+F] feature is optional. According to his explanation, there are two ways in the Case-assignment, that is, a structural or lexical Case-assignment. In English, Case-assignment is considered to be structural because English defines maximal N projections in syntax. [+F] assignment is neither lexical nor structural. When neither Cases are assigned, Obl Case by a [+F] feature is default. In this sense, it is optional.

If Larson's analysis is on the right track, it might follow that invariant Obl NPs would exist. He considers that they apply to *now* and *then*. Their special status is observed in the following examples:

(12) a. John fell down right then.
b. Packages will be arriving [then/now and at two o'clock /subsequently].
(13) I won't be free {before/after} {then/that time/*at that time/*previously}
(14) a. I am spend {*now/*then/that day} at the beach.
b. {*Then/That hour} elapsed quickly.

(ibid.: 611–612)

On the one hand, *now* and *then* co-occur with the intensifier *right* like adverbs, as in (12a) and can be freely conjoined in (12b). On the other hand, like nouns, they occur as the objects of prepositions that subcategorize NPs, as in (13). These two distributions show that they have a dual status of adverbs and nouns. Since they are

rare, they should be limited in their distribution more than other nouns, as in (14). They cannot appear in the object position in (14a) and the subject position in (14b).

The other problem is the nonoccurrence of BNAs in non-θ-positions. The reason why this is problematic is that under the principles of GB theory, movement of an NP into a non-θ-position is permitted if the moved NP has received a θ-role from some other source. These are illustrated by the following example:

(15) a. It appeared that John would learn to swim.
b. * It appeared that John would learn to swim *that period.*
c. * *That period* appeared that John would learn to swim [e]

In (15a) *it* in the subject positions of the raising verb *appear* is not θ-marked, that is, it is a non-θ-position. In (15b) the NP *that period* has no [+F] feature, hence no Case. His prediction is that it would move into the subject position to receive a Case, as in (15c). However this prediction is wrong. To solve this problem, Larson assumes that the verb and its internal and external arguments form one thematic complex, while adverbial modifiers and other kinds of predicational adjuncts form another. That is, the "scrambling" of thematic complexes is prohibited.

Moreover, as pointed out by Emonds (1987) and Kobayashi (1987), Larson's analysis over-generates unacceptable sentences, as in (16):

(16) a. * It was forgotten *that day.*
b. * It did not seem *the time* ripe.

(Kobayashi 1999: 355)

That day in (16a) and *the time* in (16b) do not have to move to the subject position because they can be Case-marked through [+F] feature of the head nouns *day* and *time*, respectively. Thus, Larson's analysis generates unacceptable sentences.

From another perspective, Tominaga (1992) points out that (10) predicts that *the day* and *a day* in (17) are also assigned Obl Case and the temporal nouns in (17) are all acceptable, contrary to the fact:

(17) John returned {that day/the next day /*the day /*a day}.

Thus, Larson's analysis has some problems and should be rejected.

2.3 Emonds (1987)

Emonds (1987) discusses empty prepositions and partially agrees with both B&G and Larson. That is, Emonds agrees with B&G in that BNAs are PPs and with Larson in that Case in BNAs is assigned through a [+F] feature. He strongly maintains that this Case-assignment through F is not direct.

According to Emonds, the locational prepositions *in* and *on*, which usually introduce BNAs optionally, are representatives of two syntactic subcategories of P, +Location and 0 Goal. Therefore the nouns which introduce an empty category P are

represented, as follows:

(18) a. way, N, +Location,...
b. day, N, +Location,...
c. place, N, +Location,...

(Emonds 1987: 620)

+Location is a regular subcategory on P but not on N, and a G(oal) is always –G, except being specified as +G lexically. Nouns such as *period* or *occasion* obtain –Location. Moreover, he makes use of the principle which explains the empty category, the Invisible Category Principle:

(19) *Invisible Category Principle*
A closed category B with positively specified features C_i may remain empty throughout a syntactic derivation if the C_i (save possibly B itself) are all alternatively realized in a phrasal sister of B.

(20) *Alternative Realization*
A feature C of a closed category B is alternatively realized in a sister D of B if and only if B appears in the surface configuration
$[B, +C]\ _D[\ldots C_i \ldots]$
and no maximal projection within D contains C_i.

(ibid.: 615)

Alternative Realization (20) is lexically licensed if it is satisfied at deep structure after lexical insertion. The preposition and Location are taken as the B and the C, respectively, if NPs such as in (18) are inserted into deep structure. The Invisible Category Principle predicts that the head P can be empty only if the C is alternatively realized in deep structure within the NP sister of P. In other words, [P, +Location] can be empty if its complement head noun is marked as +Location. The Invisible Category Principle licenses an empty Case-assigning and thematic role-assigning P.

2.4 McCawley (1988)

McCawley (1988) criticizes Larson's argument that BNAs are adverbs and assumes that bare NPs are PPs. To arrive at this conclusion, he makes several observations. First, only adverbs, not PPs, can normally precede a verb or an adjective, as in (21) to (24):

(21) a. John carefully opened the window.
b. *John with care opened the window.
c. John vigorously stirred the soup.
d. ??John in a vigorously manner stirred the soup.

(22) a. Smith may have subsequently withdrawn his lawsuit.
b. *Smith may have that day withdrawn his lawsuit.

c. Smith may have withdrawn his lawsuit subsequently/that day.
d. ??Smith may have on a subsequent day withdrawn his lawsuit.

(23) a. There will be [locally scattered] clouds.
b. *There will be [in various places scattered] clouds.
c. *There will be [various places scattered] clouds.

(24) a. You shouldn't have worded the letter so tactlessly.
b. You shouldn't have worded the letter that way.
c. a tactlessly worded letter
d. *a that way worded letter

(McCawley 1988: 585)

The adverbs *carefully* and *vigorously* in (21a) and in (21c), respectively, can appear in the pre-verbal position, while in (21b) prepositional phrases *with care* and in (21d) *in a vigorously manner* cannot appear before the verb. In (22a), the adverb *subsequently* can appear in the pre-verbal position, but in (22b) the temporal adverbial *that day* and in (22d) *on a subsequently day* cannot appear in that position. This shows that temporal adverbials behave like prepositional phrases. Likewise, the adverb *locally* in (23a) can appear before adjectives but PPs as in (23b) and BNAs as in (23c) cannot appear in that position. In (24c) the adverb *tactlessly* can function as a pronominal modifier, while in (24d) the bare NP *that way* cannot. If BNAs are adverbs, these examples could not be explained because it is a prenominal modifier position of a strictly subcategorized 'adverb.'

Second, while Larson's approach requires semantic interpretation rule (AA), the zero P analysis does not, because it has the semantics of its object by normal principle. This means that the existence of zero P determines the semantic interpretation of BNAs as in (25) and (26):

(25) a. I'll be in Pittsburgh Ø next Tuesday.
b. I'll be in Pittsburgh on Tuesday.

(26) a. She'll be in Paris Ø next week.
b. She'll be in Paris for that period.
c. She'll be in Paris during that period.

(ibid.: 586)

Finally, Larson assumes that only the head noun is related to determining whether an NP can be used adverbially, but it can also depend on determiners and modifiers, as seen in the following example:

(27) a. We went there the same day.
b. We went there {on/*Ø} a subsequent day.

(28) a. I talked to Lucy that evening.
b. I talked to Lucy {on/*Ø} an evening in May.
c. I talked to Lucy one evening in May.

(29) a. We went to Florida last {Christmas/Tuesday}.
b. We went to Florida {on/*Ø} Christmas. (cf. {on/Ø} Christmas Day)
c. We went to Florida {on/%Ø} Tuesday.

d. We go to Florida every {Christmas/Tuesday}.
e. We're going to Hawaii {in/*Ø} the summer.
f. We're going to Hawaii {in/*Ø} February.
g. We're going to Hawaii {(*in) next summer/February}.
(McCawley 1988: 588–589)

The same day in (27a) and *that evening* in (28a) can be bare but *a subsequent* in (27b) *day* and *an evening in May* in (28b) cannot be bare. Likewise, *last Christmas* and *last Tuesday* in (29a) and *every Christmas* and *every Tuesday* in (29d) do not take the preposition, while *the summer* in (29e) and *February* in (29f) have to take the preposition. There can be a difference in acceptability among speakers such as the week name *Tuesday* in (29c).

Thus McCawley criticizes Larson and argues that bare NPs are PPs. Although he convincingly presents a variety of data, we cannot find alternatives in his analysis.

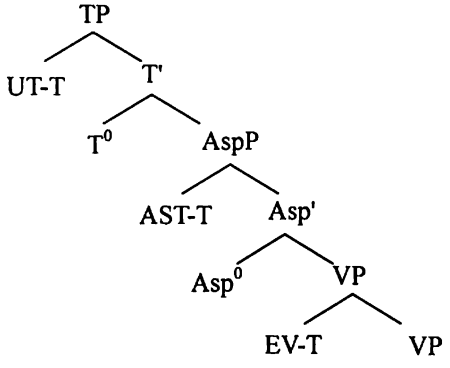
2.5 Demirdache & Uribe-Etxebarria (2000, 2004)

Demirdache & Uribe-Etxebarria (D&U-E) (2000, 2004) apply their analysis of tense to prepositional and adverbial phrases of time. Let us take an overview of their analysis of tense before looking at their analysis of BNAs.

They propose that the grammar of Tense, Aspect and temporal adverbials can be reduced to the same set of theoretical primitives and uniformly derived from a theory of the structural representation of temporal relations, extending the proposals in Zagona (1999) and Stowel (1995). In particular, they argue that Tenses, Aspects and time adverbials are spatiotemporal predicates, which take two time denoting phrases as their arguments and project their temporal argument structure in the syntax, following Klein (1995).

Spatiotemporal predicates establish topological relations between their arguments and are uniformly defined in terms of an abstract semantic opposition, central versus non-central coincidence. This relation is between the location of the Figure with respect to the Ground, which is proposed in Hale (1984). Central coincidence shows that the location of the Figure coincides with the ground. They make use of this proposal to explain why predicates expressing central coincidence between the Figure and the Ground are systematically used to form progressive sentences. These notions apply to prepositions such as *in*, *on*, or *at*, as well as verbs of location, stance or posture such as *stay*, *sit*, *lie down*, *live*, or even verbs of non-directed motion such as *walk* in English. Moreover, they use them to explain why predicates expressing [–central, +centrifugal coincidence] between F and G, which means that the location of F is before G and the trajectory of F is towards G, are cross-linguistically used to express the Prospective/Future, whereas predicates of [–central, +centripetal coincidence] between F and G, which means that the location of F is after G and the trajectory of F is from G, can appear cross-linguistically to express the Perfect/Past. The former is typically expressed by verbs such as *go* in English and the latter by prepositions such as *after* or verbs such as *come from* or *throw away* in English.

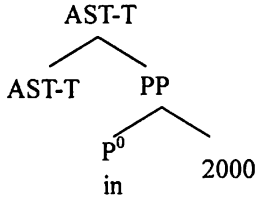
D&U-E are mainly based on the Klein's (1995) representation of tense and aspect, extending Reichenbach's (1947) tense theory. According to them, aspect plays a role to focus an interval in the temporal contour of the event described by a sentence. They use the Assertion Time (AST-T), which is the time interval in the event denoted by the VP (EV-T) on which ASP focuses, in other words, the time to which the assertion of a sentence is confined (Klein 1995). Only the time interval focused by Aspect is visible to semantic interpretation. Tense orders this time interval (AST-T) with respect to a reference time, which could be identified with the utterance time (UT-T), as illustrated in Figure 2:



<Figure 2 > (Demirdache & Uribe-Etxebarria 2004: 145)

In Figure 2, D&U-E assume that T^0 is a spatiotemporal ordering predicate with the meaning of AFTER (past), BEFORE (future), or (WITH)IN (present), and Asp^0 is a spatiotemporal ordering predicate with the meaning of AFTER (perfect aspect), BEFORE (prospective aspect), or (WITH)IN (progressive aspect).

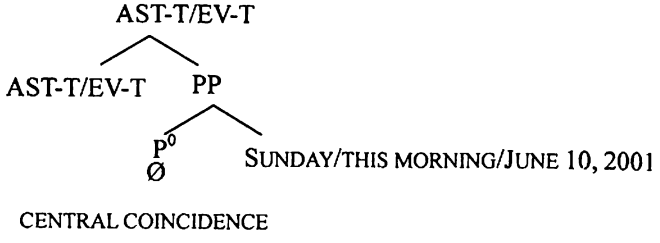
Let us now consider temporal adverbs. D&U-E assume that temporal adverbs are semantically and syntactically PP modifiers, predicated of the time-denoting phrases projected in the syntax as arguments of Asp^0. In other words, they are predicated of either the AST-T or the EV-T. Under their proposal, temporal adverbs are analyzed as PPs headed by a dyadic predicate of spatiotemporal ordering. For example, a temporal adverb *in 2000* is represented in Figure 3:



<Figure 3> (ibid.: 155)

In Figure 3, the internal argument of the spatiotemporal predicate is the time interval denoted by 2000 and its external argument is AST-T. The preposition *in* restricts the reference of the AST-T by establishing a relation of central coincidence between the AST-T and the time designated by *2000*.

In the case of BNAs, D&U-E assume that they are PPs headed by null P, as seen in *Ø Sunday* or *Ø this morning* in Figure 4, for example. In their term, silent spatiotemporal predicates always express central coincidence.



<Figure 4> (Demirdache & Uribe-Etxebarria 2004: 163)

2.6 Summary

We have observed five previous analyses, B&G (1978), Larson (1985), Emonds (1987), McCawley (1988), and D&U-E (2000, 2002, 2004). B&G's Preposition Deletion and Larson's AA and Oblique-Case-assignment are problematic, as pointed out by Larson and McCawely, respectively. Emonds' analysis is also untenable because it cannot explain why some temporal adverbs take an empty preposition but others cannot. Finally, D&U-E do not explain why temporal adverbs *Sunday* or *this morning* do not take a preposition, just assuming the null preposition.[2, 3]

3 THEORETICAL ASSUMPTIONS

In this section, we shall introduce our theoretical assumptions. Our analysis is based

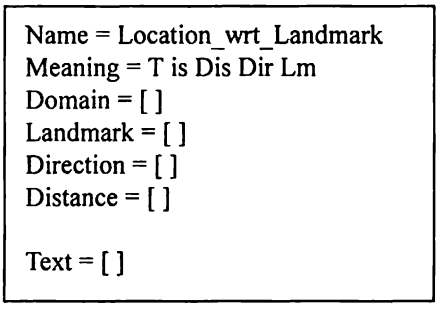
[2] Whitman (1998) observes infinitival relatives and finite relatives including bare-NP adverbs and analyzes their extraction within the framework of HPSG. Flickinger (1996) is also based on the HPSG framework and attempts to capture idiosyncrasies of temporal adverbs.

[3] Within the framework of the Minimalist Program, Kobayashi (1999) argues that BNAs are generated as DPs. Although Kobayashi's analysis is an insightful one, it does not explain the idiosyncratic characteristics of *every*, as he himself admits (p. 371).

on the tenets of Construction Grammar as described in Kay and Fillmore (1999), Zwicky (1994), Goldberg (1995), Michaelis and Lambrecht (1996), Johnson (1999) or Michaelis (2003, 2004). Construction Grammar assumes that grammatical constructions are essential units out of which sentences are built. On the view of Kay and Fillmore (1999) or Michaelis (2003, 2004), constructions include not only words and phrases, but also idioms and other types of collocations. An important idea in Construction Grammar is that there is no important difference between 'core' and 'peripheral' constructions.

As pointed out by Fillmore (2002), temporal adverbials are idiomatic, as seen in the context of the occurrence of *some day* or the distributional restrictions of *yesterday* or *tomorrow*. In this paper, we will view the temporal adverbs as grammatical constructions in the spirit of Construction Grammar.

In Construction Grammar, the semantic and syntactic specifications are represented in the form of 'attribute-value matrices' (AVMs). An attribute indicates a particular property, and the value is assigned to each attribute. Fillmore (2002) analyzes temporal adverbials in the architecture of Construction Grammar. He assumes a Vector Construction, which consists of a temporal Target, a temporal Landmark, a particular Distance, and a particular Direction. More specifically, the semantic information which a Vector Construction represents is shown in Figure 5:



<Figure 5> (Fillmore 2002: 39)

In Figure 5, the semantic information of temporal expressions is indicated between Name and Text notations. The notation of Meaning shows that the target is described as located at a distance, in particular direction, from the landmark. The semantic feature Domain is time because we discuss temporal expressions. Figure 5 is adapted only to single lexical terms capable of expressing the full configuration of these features by themselves, for example *recently* or *soon*. Once the attribute Domain is specified as time, the properties of the Landmark, the Distance, and the Direction have to be compatible with the idea of time.

Among the temporal constructions that Fillmore (2002) presents, we are concerned with *today*, *yesterday*, or *tomorrow*, because we focus on BNAs. These temporal adverbs locate the Target by referring to a calendar unit, such as day, year, month, etc. The characteristic of the representations of *today*, *yesterday*, and *tomorrow* is that the Landmark is 'now.' They are illustrated by the following figure:

Name = Location_in_Calendar_Unit
Meaning = T is in #2[day] which #3[equals]
the #2[day] which includes #4[now]
Domain = time
CU Type = #2[day]
Relation = #3[equals]
Landmark = #4[now]

Text = [today]

<Figure 6> *today* (Fillmore 2002: 49)

Name = Location_in_Calendar_Unit
Meaning = T is in #2[day] which #3[precedes]
the #2[day] which includes #4[now]
Domain = time
CU Type = #2[day]
Relation = #3[precedes]
Landmark = #4[now]

Text = [yesterday]

<Figure 7> *yesterday* (ibid.)

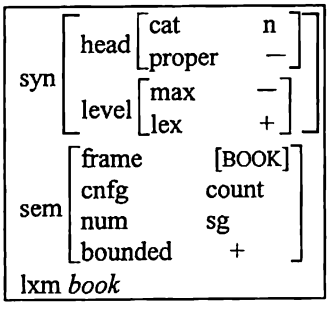
Name = Location_in_Calendar_Unit
Meaning = T is in #2[day] which #3[follows]
the #2[day] which includes #4[now]
Domain = time
CU Type = #2[day]
Relation = #3[follows]
Landmark = #4[now]

Text = [tomorrow]

<Figure 8> *tomorrow* (ibid.)

In these figures, the values of the attribute meanings are marked with *unification indices*, which express a connection between the values. These three representations differ in the values of the Relation, which indicates a relation between the temporal unit containing the target and that containing the landmark. *Today*, *yesterday* and *tomorrow* take 'equals,' 'precedes' and 'follows' as the values of the Relation, respectively. The important thing in our discussion is that the Landmarks of all these three are 'now.'[4]

Furthermore, based on Fried and Östman (2004), we also employ the following notation for temporal nouns:



<Figure 9> The Representation of *book* (Fried and Östman 2004: 32)

Figure 9 shows the representation of the noun *book* in English. In Figure 9, the head feature and the level feature specify that it functions as the head of the larger construction and whether it is a phrasal constituent or a lexical constituent, respectively. In a set of syntactic attributes, it is shown that *book* is categorized as a noun and is not classified as a proper noun. In a set of semantic attributes, it is shown that *book* is bounded, a count noun, which is relevant to the *cnfg* attribute, and singular. In our discussion, a temporal noun *day* is described by using a representation similar to Figure 9 in order to clarify unification.

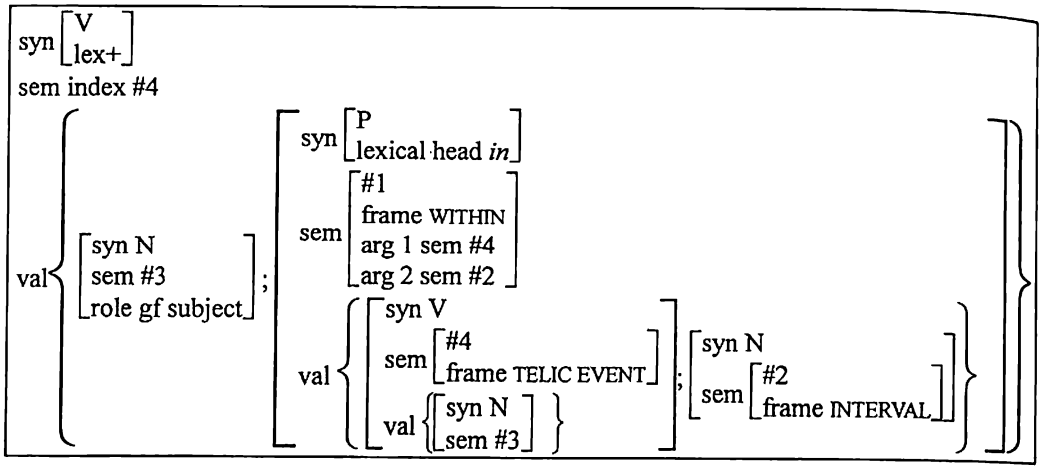
4 A CONSTRUCTION GRAMMAR ANALYSIS TO BNAS

In this section, we would like to argue that deictic temporal BNAs are licensed by a Vector Construction, which is proposed by Fillmore (2002), and the frame adverbial

[4] Ortigosa (2003) focuses on temporal deictic adverbs, such as *yesterday*, *tomorrow*, or *today*, and tries to deal with their pragmatic and syntactic characteristics by making use of functional models such as Role and Reference Grammar and Functional Grammar. Although Ortigosa seems to be based on the tenets of Construction Grammar, the pragmatic character of temporal deictic adverbs is not drawn in its representation.

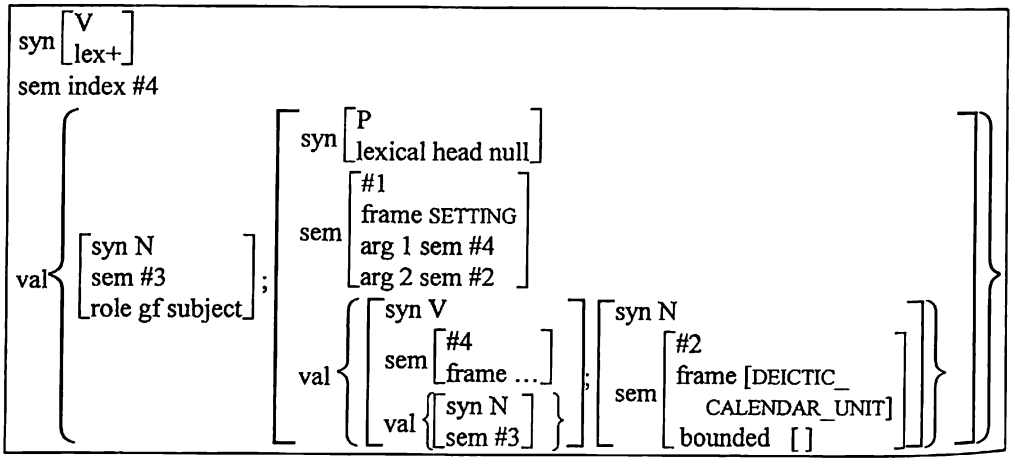
construction, which is presented by Michaelis (2004), and others are licensed by our proposed construction.

Let us first consider the frame adverbial construction, which is proposed by Michaelis (2004). She provides an account for coercion phenomena and some adverbial constructions play an important role in her analysis. The frame adverbial construction is represented by the following figure:



<Figure 10> The Frame Adverbial Construction

Figure 10 shows the frame adverbial construction that takes the preposition *in*. Since we are concerned with so-called 'null preposition,' Figure 10 needs to be modified. We propose the following figure where the adverbial construction represents a setting and its Landmark is 'now' in the sense of Fillmore (2002):



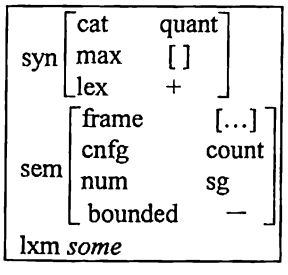
<Figure 11>

In Figure 11, we assume that the semantic representation of this adverbial construction is captured by the semantic frame labeled SETTING. The second valence member is a nominal expression which is labeled as DEICTIC_CALENDAR_UNIT. The semantic frame of the verb is expressed by the notation [...] because it is not the focus of interest in our discussion. As we saw above, *today*, *yesterday*, and *tomorrow* all have 'now' as their Landmark, and therefore, as a first approximation, we propose that one of the valence members of the null preposition is characterized as deictic, and the attribute *bounded* is not specified because they do not have to do with mass or plural count nouns.

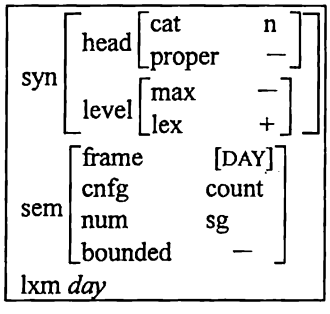
Let us next consider temporal nouns with quantifiers. As we saw above, they do not have a preposition, as follows:

(30) a. John arrives every Monday.
b. John will arrive some day.
c. Five little ducks went swimming one day.

In (30), temporal BNAs *every Monday* and *some day* include so-called quantifiers *every* and *some*. Notice that the noun phrase *every Monday* is construed as unbounded. We also categorize *some day* as unbounded because we cannot identify the day that is denoted by *some day*. Based on Fried and Östman (2004), the noun *day* and the quantifier *some* are shown in the lexical constructions in Figure 12(a) and (b), respectively:



a. The Construction for *some*



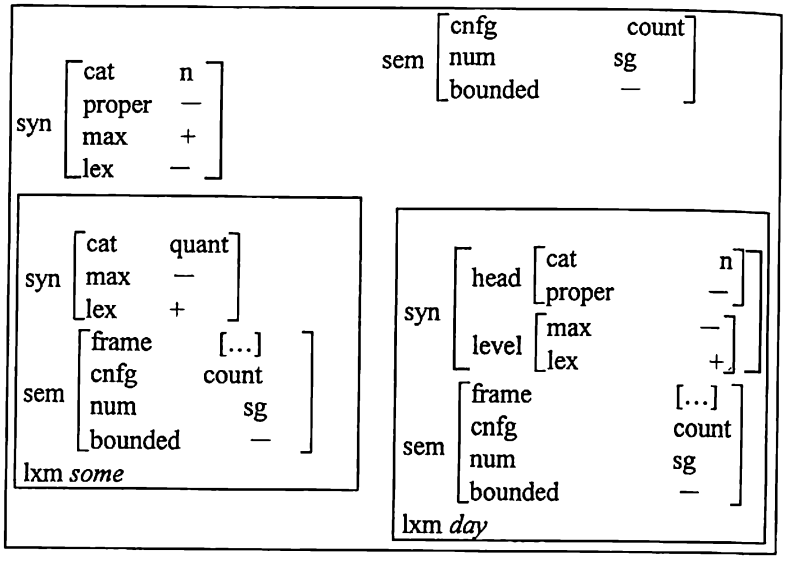
b. The Construction for *day*

<Figure 12>

Notice that the value for the attribute *bounded* in Figure 12(a) is [bounded −], while one in Figure 12(b) is [bounded +], and they are in conflict. In accordance with Michaelis (2004), we assume that constructional requirements override lexical features when the lexical item has different values from those of a given construction.[5] Based on this assumption, we argue that the construct *some day* has the

[5] This is stated as the override principle:
The override principle. If a lexical item is semantically incompatible with its syntactic context, the

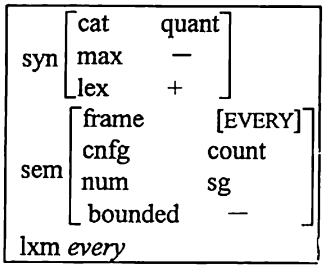
[bounded −] feature, as shown in Figure 13:



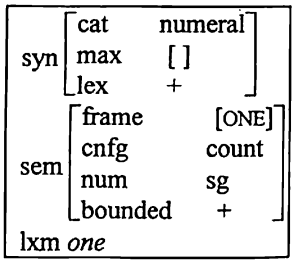
<Figure 13>

We assume that the value of the attribute *bounded* of *day* is [bounded −] and this is coerced by *some* in Figure 13.[6]

The quantifier *every* and the numeral *one* are represented in the lexical constructions in Figure 14(a) and (b), respectively:



a. The construction for *every*



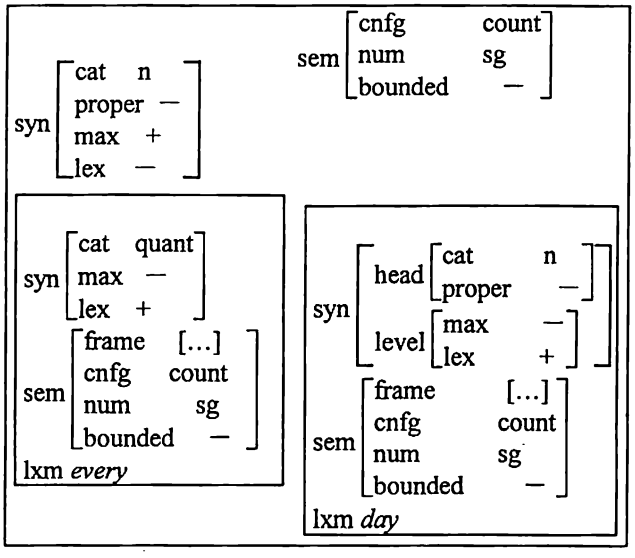
b. The construction for *one*

<Figure 14>

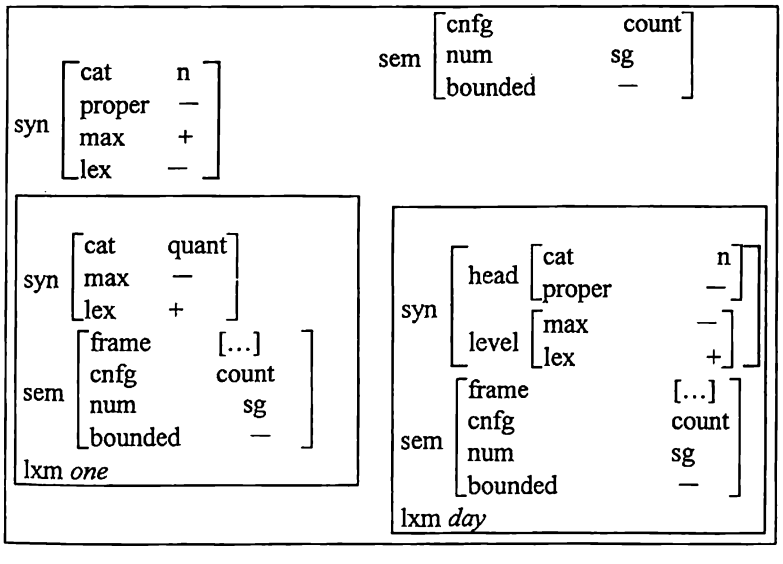
meaning of the lexical item conforms to the meaning of the structure in which it is embedded. (Michaelis 2004:25)

[6] Koguma (1997) accounts for the absence of the preposition of *every Sunday*, for instance, in terms of unboundedness.

In the similar fashion, we propose that the constructs *every day* and *one day* have the value [bounded −] for its attribute because they cannot be identified on the time axis. They are represented by Figure 15 and 16, respectively:

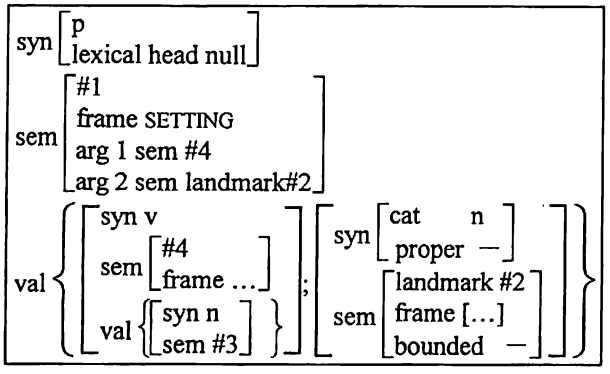


<Figure 15> The Construction for *every day*



<Figure 16> The Construction for *one day*

Based on our discussion so far, we can formulate a generalization about the pattern of BNAs with quantifiers in English. Figure 17 contains an informal feature representation of English BNAs with quantifiers which prohibits constructs such as **on every day*, **on some day*, or **on one day*:



<Figure 17> The BNA Construction

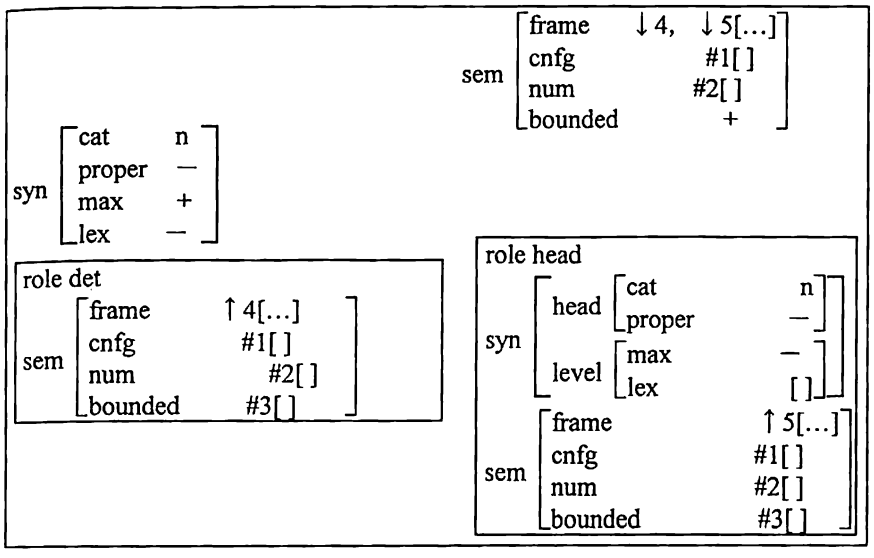
The difference between the BNA construction with quantifiers and one with deictics is that the former includes the value of [bounded −] while in the latter the attribute *bounded* is not specified. It is important to note that the notation of a pair of empty brackets [ ] is different from that of a pair of brackets filled three dots [...] in that the former indicates that the value of a given attribute is unspecified, while the latter indicates that a value needs to be specified, although it is not spelled out presently for a shortcut, for example. We would like to argue that although both of them do not take a preposition they differ in boundedness, and the property of deictic BNAs should be captured in terms of a Vector Construction.

Notice here that we observed the examples in which a preposition is optional, repeated below:

(31) John arrived {the previous April/March 12th/Sunday/the Tuesday that I saw Max}. (=2)

The temporal NPs in (31) all take the preposition optionally. We find that *the previous April* and *the Tuesday that I saw Max* in (31) include the definite article *the*, and then we would like to argue that their property is captured in terms of the English determination construction which is presented by Fried and Östman (2004: 37):[7]

[7] In Figure 18, 'the downward arrow ↓ indicates that the external semantics integrates the semantics of the constituent(s) marked by the upward arrow ↑ '(Fried and Östman 2004:37).



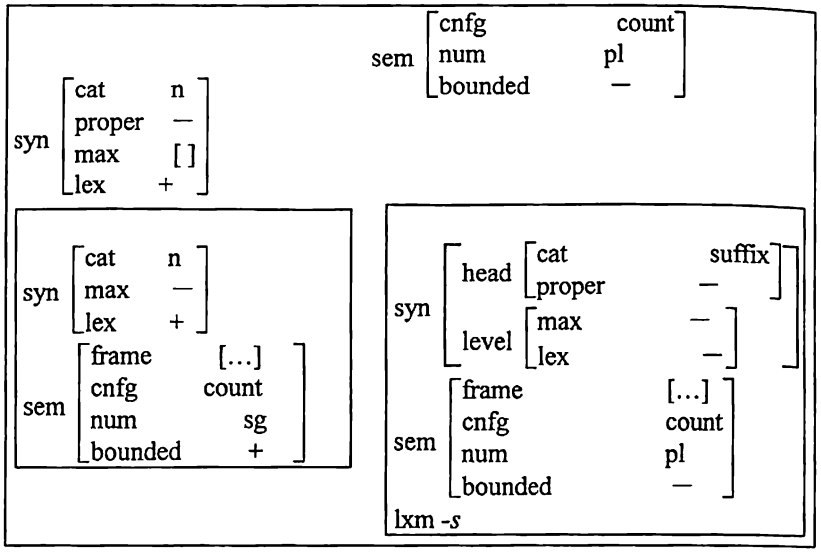
<Figure 18> The English Determination Construction (Fried and Östman 2004: 37)

In Figure 18, the value of the attribute *bounded* is [bounded +]. This indicates that with respect to boundedness, a preposition can occur. With respect to a Vector Construction, its Landmark is a reference time, and the Target cannot be determined without identifying its reference time. In this sense, boundedness is unspecified, and the temporal NPs in (31) can stand alone.

Our approach can also capture the characteristic of the temporal expression as seen in (32):

(32) Tom works (on) Sundays.

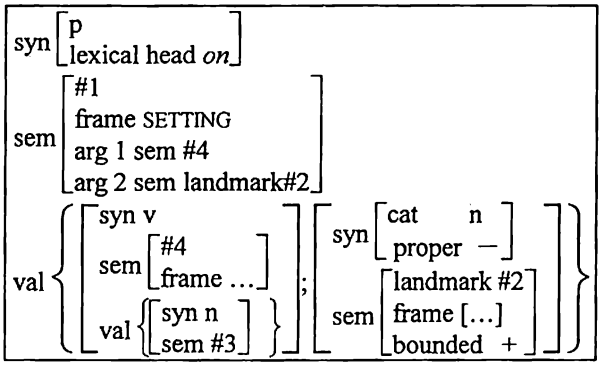
In (32), *Sundays* can optionally take a preposition. Let us now consider the plural construction, which is represented in Figure 19:



<Figure 19> The Plural Construction

The important point in Figure 19 is that the value of the attribute *bounded* is [bounded −] and this representation captures the fact that *Sundays* can stand alone. Notice here that the noun which is required by the suffix is [bounded +] in Figure 19, while *day* which is required by *every*, *some*, or *one* is [bounded −], as seen in Figure 12(b). We argue that the fact that *on* can occur in *Sundays* is captured by this inherent boundedness of the noun appearing in the plural construction.

Finally, we propose the construction for *on* which appears in the temporal phrase, as in Figure 20:



<Figure 20> The Construction for *on*

In Figure 20, we argue that the valence member of *on* includes the value of [bounded +] and in some case, it is inherent.

5 CONCLUSION

We have demonstrated that temporal BNAs in English are licensed by a Vector Construction and ones with quantifiers are licensed by the BNA Construction. With respect to boundedness, we have argued that it is not specified in the second valence member of the former while it is [bounded −] in that of the latter. Moreover, it has been shown that optionality of the preposition is captured by a Vector Construction and the Determination Construction: when a Vector Construction is evoked, a preposition does not occur because the value of boundedness is not specified, while when the Determination Construction is evoked a preposition occurs because the value of boundedness is [bounded +]. A Vector Construction does not mention boundedness because it indicates an adverbial construction.

Thus, our approach has offered a unified account for licensing temporal BNAs in English.

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